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CHAPTER 3

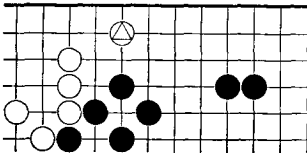
Endgame Tesuji

The endgame has its own special brand of tesuji, mostly concerned with the edge of the board. Many of them are only one or two points better than the more obvious alternative plays, but if you go through the endgame losing one point here, two points there, and so on at every turn, your losses can quickly mount up. On the other hand, if you can outplay your opponent by just a couple of points in half a dozen places, you can overtake a ten-point lead.

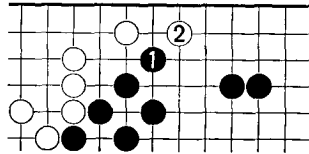
Defending Territory

Dia. 1. White has just come sliding into Black's upper right corner with △. Do you know the correct response?

Dia. 2. Your first reaction might be this diagonal play, but White can jump in front of it with 2 and do plenty of damage.



Dia. 1

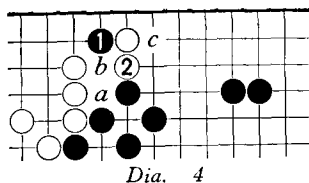
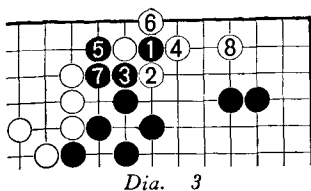


Dia. 2

Dia. 3. (next page) An aggressive player might try this contact play, but it leads to an exchange, White living with 2 to 8. The question is how much Black can do in return to the white territory to the left. Depending on the answer, Black 1 could be the best move, and White might have to draw back to 5 instead of bending out at 2, but the odds are that Black has taken a loss.

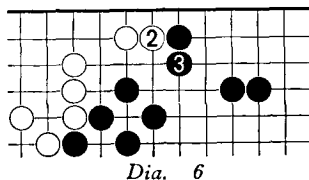
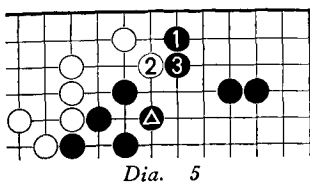
Dia. 4. If there were a black stone at *a*, this inside contact play would be a tesuji-White would have to reply at *b* and

Black could then play `c` — but as things stand White can play 2 and Black's position has worsened considerably.



Dia. 5. The correct move is frequently to confront White on the second line, one space away. White cannot get anywhere with 2, because he runs into the stone marked $\triangle$.

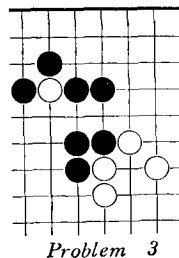
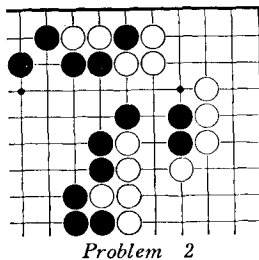
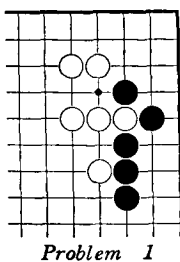
Dia. 6. White 2 here is better, but Black can complete his defense with 3.



Problem 1. White to play. How can he defend the largest amount of corner territory?

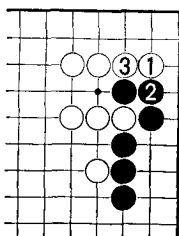
Problem 2. White could capture two stones by wedging in at the 5-5 point, but he has a better way.

Problem 3. Black to defend the corner.

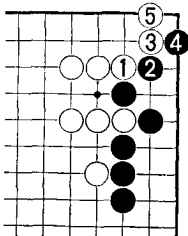


Answer to problem 1. If Black 3, White 2.

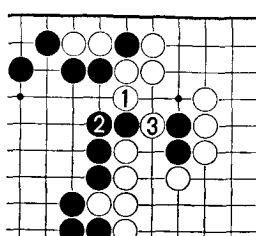
Dia. 1a. If White plays 1 here, he lets Black push him around with 2 and 4 and comes out about four points worse off.



Ans. to Prob. 1



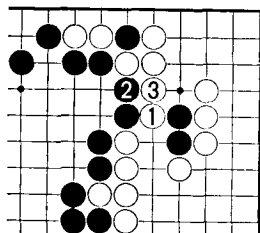
Dia. 1a



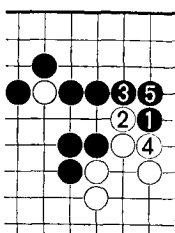
Ans. to Prob. 2

Answer to problem 2. The clamp at 1 makes 2 and 3 miai, and no doubt you have already verified that Black 3, White 2, ends badly for Black.

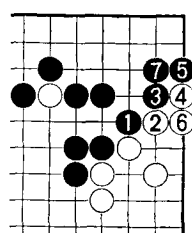
Dia. 2a. Again, the wrong answer is four points worse.



Dia. 2a



Ans. to Prob. 3



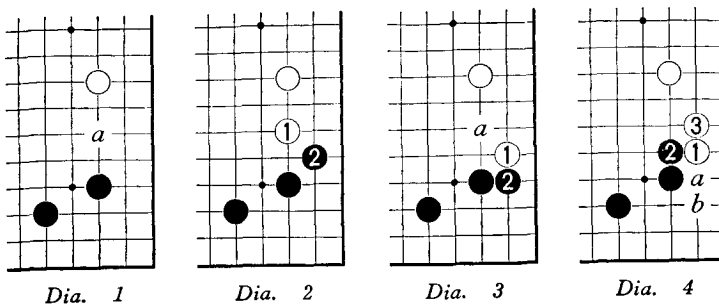
Dia. 3a

Answer to problem 3. Black 1 should be the first move that occurs to you in this shape.

Dia. 3a. Black's territory may be the same as before, but White's is two points larger.

Extensions

During the opening, extensions are generally made on the third or fourth line, but during the endgame, they are often made on the second line.



Dia. 1. During the opening, *a* would be the natural extension point for both sides in this position.

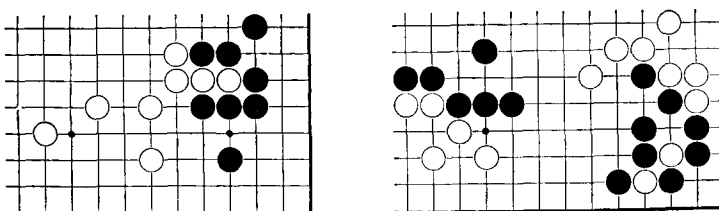
Dia. 2. If White extended to 1 during the endgame, however, Black could reply immediately at 2, and on the edge, at least, White would have gained no profit.

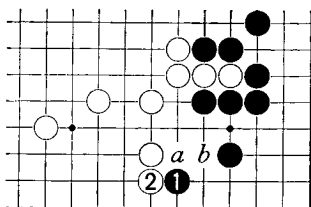
Dia. 3. In the endgame, the correct extension is likely to be the large knight's move on the second line to 1. If Black replies at 2, White can defend at *a* for a large profit, or he can leave this as a forcing exchange and turn elsewhere.

Dia. 4. If Black presses at 2 he can make White reply at 3, but this leaves his corner open to White *a*, *b*, etc.

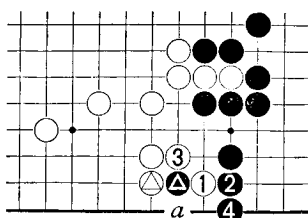
Problem 1. Black to play. What should he do on the lower edge?

Problem 2. White to play? How should he extend toward Black's very strong corner position?





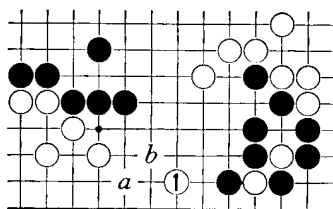
Ans. to Prob. 1



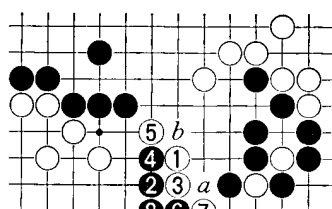
Dia. 1a

Answer to problem 1. Black can keep on with *a* or *b* after White 2, but even if he leaves the corner as it is, he has gained something from the exchange.

Dia. 1a. For example, suppose White later clamps him at 1. Leaving aside the possibility of drawing  out at 3, Black can play 2 and then 4, which threatens Black a while preventing White 4. If he had somehow played  after White 1 and 3, White would have answered at *a*, not , and Black 4 would not have worked.



Ans. to Prob. 2



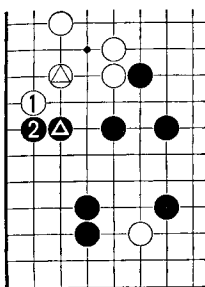
Dia. 2a

Answer to problem 2. White 1 is the best extension. Black cannot invade behind it: Black *cr*, White 6, for example.

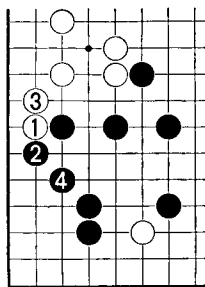
Dia. 2a. If White extends on the third line, Black can invade at 2; after Black 8, if White connects at *a*, Black cuts at *b*. If White plays 1 too conservatively at 2 or 4, Black can counterextend to 3.

The Hitting-Under Tesuji

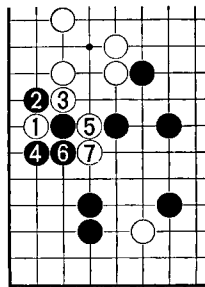
Dia. 1. When two stones oppose each other like  and  the diagonal move at 1 is a common endgame play, but it is well to remember that about half the time, as here, there is an even better play.



Dia. 1



Dia. 2



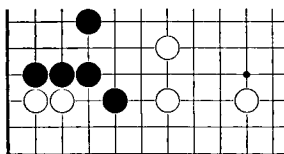
Dia. 3

Dia. 2. White should hit under the opposing stone with 1. He still keeps sente, and his result is at least two points better than in Dia. 1.

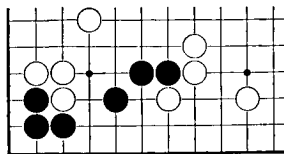
Dia. 3. If Black captures White 1, White can break through with 3, 5, and 7, and Black is going to lose more in the center than he has gained on the side.

Problem 1. White to play. What use can he make of his two stones in the corner?

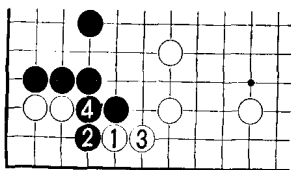
Problem 2. Black to play. White might make the diagonal play in this position, but Black has a better move.



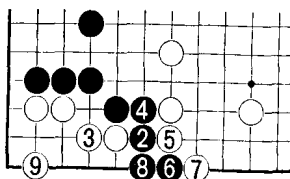
Problem 1



Problem 2



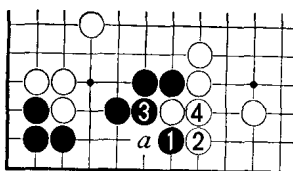
Ans. to Prob. 1



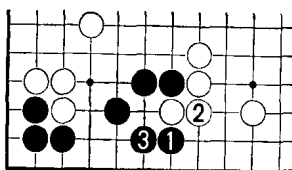
Dia. 1a

Answer to problem 1. White 1 threatens to revive the two stones in the corner, and Black has to defend with 2 and 4.

Dia. 1a. If he plays 2 here, White lives with 3 to 9.



Ans. to Prob. 2



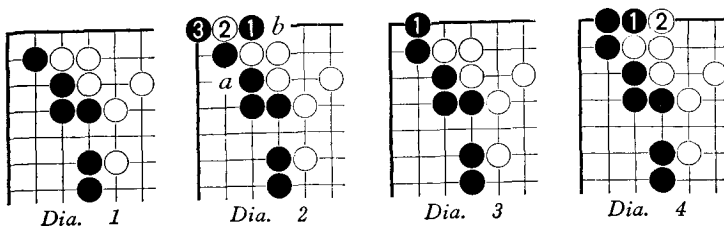
Dia. 2a

Answer to problem 2. Black should clamp at 1. He can connect at a after White 4, or he can leave the position unconnected. In the latter case he has still gained, because now a would be gote for White instead of sente.

Dia. 2a. If White wants sente badly enough, to make some other big play, he can connect solidly with 2, but then Black draws back to 3. This means a big local loss for White. Compare this result with Black's connecting at a in the correct answer, or with Black 1 at 3, White 2 at 1 in Dia. 2a.

On the First Line

Dia. 1. (next page) Black has an opportunity to make a four-point reverse sente play in the corner. What should it be?



Dia. 2. This hane is wrong. It lets White make the throw-in at 2, which will force Black to connect eventually at 'a'. Note that Black cannot play *b*, and that if White plays *b*, Black cannot connect at 2.

Dia. 3. The correct move is to descend straight to the edge with 1.

Dia. 4. Later Black can make this exchange in sente, so White's territory is the same as it was in *Dia. 2*, and Black's is from one to three points bigger.

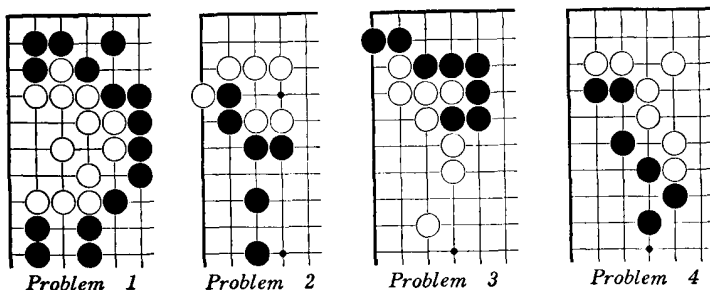
This has been one example of defensive first-line technique. The next four problems are concerned with offensive first-line technique.

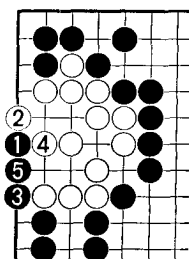
Problem 1. Black to play on the left edge. It would be wasteful of him simply to hane.

Problem 2. White to play.

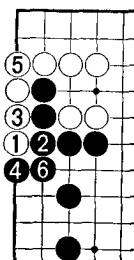
Problem 3. Black to gain three points in sente.

Problem 4. White to play. It takes some reading out, but he has a much better play on the left edge than the hane.

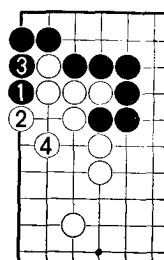




Ans. to Prob. 1



Ans. to Prob. 2



Ans. to Prob. 3

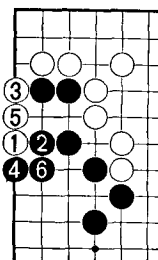
Answer to problem 1. Black can connect either up or down the edge.

Answer to problem 2. If Black plays 2 at 3, White cuts at 2.

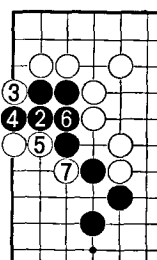
Answer to problem 3. This is two points better for Black than playing 1 at 3.

Answer to problem 4. White can jump all the way in to 1. If he hane with 1 at 3, Black would answer at 1.

Dia. 4a. If Black wants to try to cut White off, he can only play 2 and 4 like this, but White 5 and 7 trap him in a shortage of liberties.



Ans. to Prob. 4



Dia. 4a

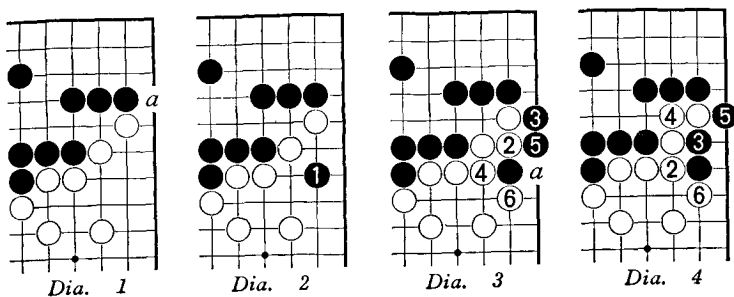
Placement Tesuji

Dia. 1. (next page) In this position White can hane at *a* in sente, but we are interested in what Black can do if he gets a chance to play first.

Dia. 2. He has an interesting placement tesuji at 1.

Dia. 3. If White blocks at 2, Black comes around with the hane at 3. If White tried to stop that at 5, Black would cut at 4, so White connects at 4 and Black plays 5. He need not connect at *a* (three points in reverse sente) after White

6. Even after White a, he has still gained about four points in comparison with White a in Dia. 1.

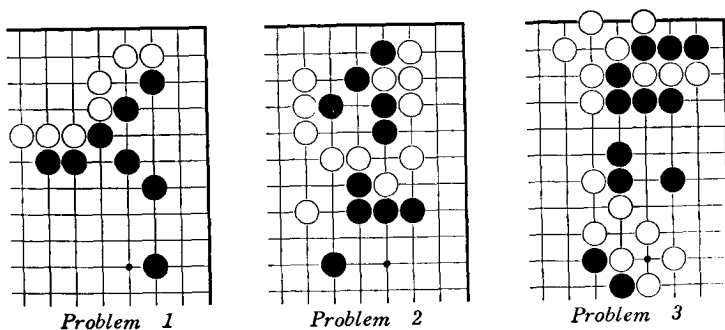


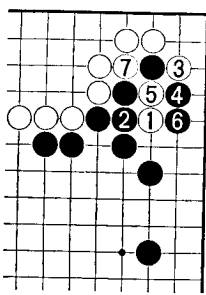
Dia. 4. Actually White 2 in this diagram is slightly better than 2 in the last diagram, but Black links up with 3 and 5. Once again, even without connecting (five points in gote) after White 6, he has made a profit.

Problem 1. White to play in the corner. The hane is the obvious move, but it gains in effect if preceded by a placement tesuji.

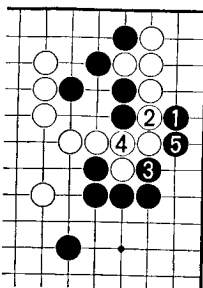
Problem 2. Black to play on the right side.

Problem 3. White to invade Black's territory.

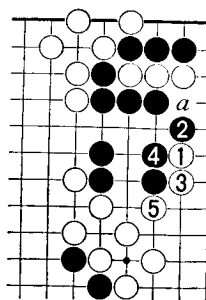




Ans. to Prob. 1



Ans. to Prob. 2



Ans. to Prob. 3

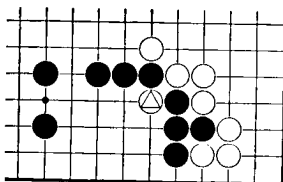
Answer to problem 1. White 1 and 3 are a standard combination. Black could reduce the damage somewhat by playing 4 at 5, (followed by White 4, Black 6), but then he would end in gote.

Answer to problem 2. If White plays 2 at 5, then Black 4, White 3, and Black 2 mean a disaster.

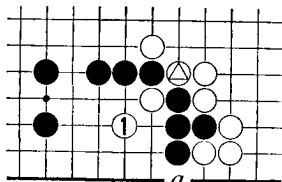
Answer to problem 3. White 1 threatens White 'a', which would save the three white stones and kill the three black stones in the corner. Black has to prevent this with 2, and White can link up with 3 and 5. White 1 at 2, followed by Black a and White 3, would be a failure, since Black could capture the invaders with a hane below 3.

Squeezing Tesuji

Dia. 1. White has a spectacular way to make use of the stone marked $\triangle$.



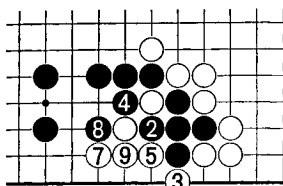
Dia. 1



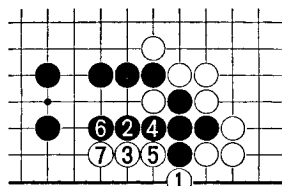
Dia. 2

Dia. 2. He starts with this diagonal move, which is the eye-stealing tesuji with respect to both White $\triangle$ and the coming white hane at 'a`.

Dia. 3. Black's only answer is to give atari at 2. White gives a counter-atari at 3, squeezes with 5, and connects at 7. Black loses most of his territory and may even be in eye trouble.



Dia. 3
⑥ connects

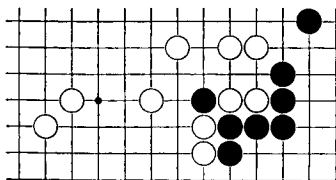


Dia. 4

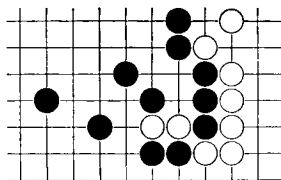
Dia. 4. Playing the hane at White 1 would let Black take the key point with 2, and after that White could not do quite the same damage as in Dia. 3.

Problem 1. Black to play. If he uses his stranded stone to carry out a squeezing maneuver, he can reduce White's territory by a huge amount.

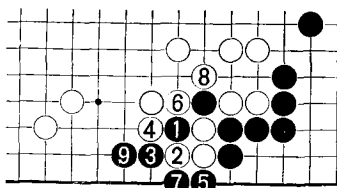
Problem 2. White to play. What can he do on the lower edge?



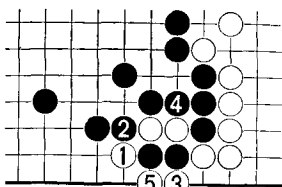
Problem 1



Problem 2



Ans. to Prob. 1



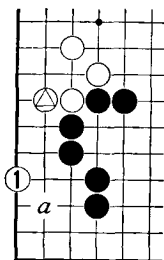
Ans. to Prob. 2

Answer to problem 1. Black sacrifices 1 in order to squeeze White with 3, 5, and 7. If he played 1 at 5, White would answer at 3.

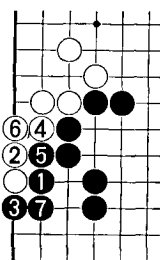
Answer to problem 2. This sequence is clearly better than playing 1 at 3 and letting Black answer at 1.

The Monkey Jump

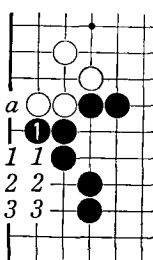
Dia. 1. When White has Black's territory undermined by a stone like $\triangle$ on the second line, he can reduce it by sliding in to 1. This move is called the monkey jump. There are various ways to answer it, but the one thing Black should not do is to give way and play 'a'.



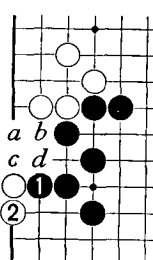
Dia. 1



Dia. 2



Dia. 3



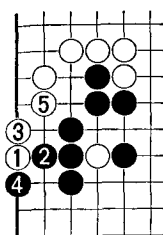
Dia. 4

Dia. 2. In this particular position, the contact play at Black 1 is his best reply.

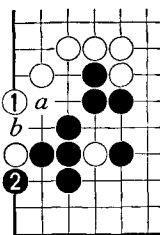
Dia. 3. The monkey jump in Dias. 1-2 gained nine points in sente as compared with Black 1 here. It reduced Black's territory by six and, since a is Black's sente, increased White's by three.

Dia. 4. With the position changed, Black 1 no longer works, but Black has a whole arsenal of other responses—at *a*, *b*, *c*, *d*, and even 2 — to choose from. See problem 1.

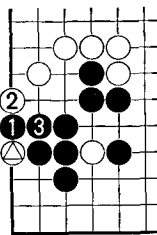
Dia. 5. Here is a case where if White draws back at 3, he ends in gote, but this is wrong. Unless the enemy ignores it completely, the monkey jump should never lead to gote.



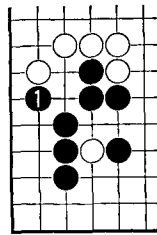
Dia. 5



Dia. 6



Dia. 7



Dia. 8

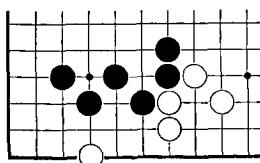
Dia. 6. To keep sente, White should jump back to 1 and ignore Black 2, leaving *a* and *b* as miai. His profit is only slightly less than in *Dia. 5*.

Dia. 7. He can also treat White $\triangle$ as a forcing move and abandon it. If Black captures it, his profit is still two points less than—

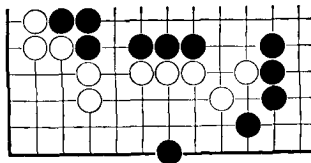
Dia. 8. — if he had been allowed to play 1 here.

Problem 1. How should Black answer White's monkey jump? Two of the five moves suggested in *Dia. 4* are correct.

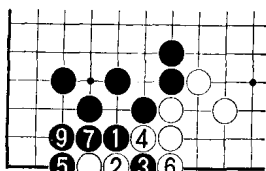
Problem 2. White to answer Black's monkey jump. This one is harder to stop; only one move does the job properly.



Problem 1

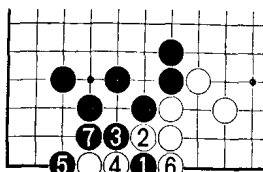


Problem 2



Ans. to Prob. 1

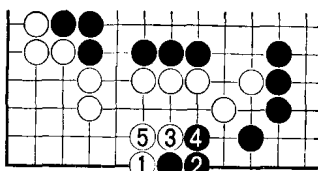
⑧ connects



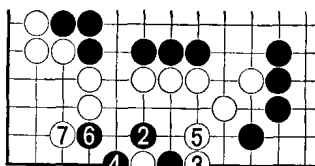
Dia. 1a

Answer to problem 1. Black 1 and the throw-in at 3 fit this shape nicely and keep White under control.

Dia. 1a. The order of Black 1 and 3 is reversible, and White can save the connection at 1 as a sente play for later.



Ans. to Prob. 2



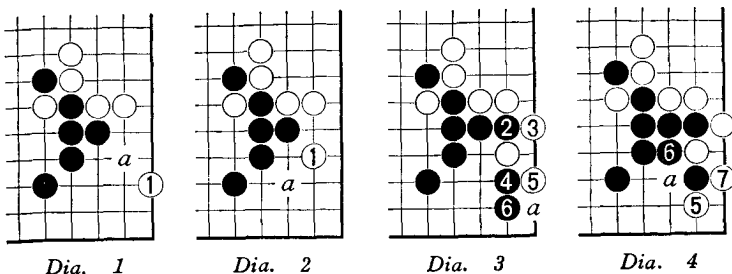
Dia. 2a

Answer to problem 2. White 1 halts Black in his tracks. If Black 2 at 3, White 5 would leave Black with gote.

Dia. 2a. Black cannot press forward with 2; his whole group dies. Better than the Monkey Jump

The monkey jump is such a good move that it is easy to get into the habit of playing it automatically, but there are lots of times when another move is even better.

Dia. 1. (next page) Here it would definitely be a mistake. Black has a good reply to it at 'a', but he can also ignore it, since White has no very exciting follow-up move.

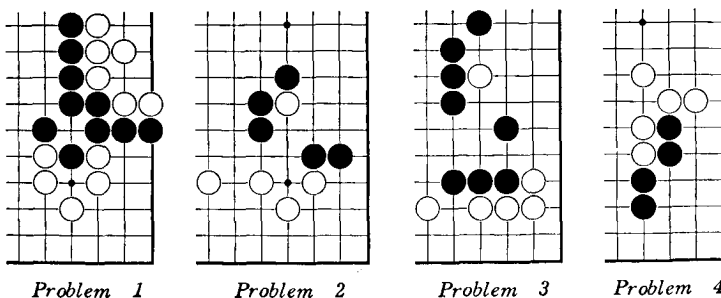


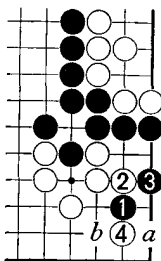
Dia. 2. The better play is to jump in on the second line to 1. When possible, this one-point jump is superior to the monkey jump nine times out of ten. If Black ignores it, White has a very big follow-up move at `a`.

Dia. 3. Here is one likely continuation. Even if Black has enough ko threats to play 6 at a, White still gets a better result than with the monkey jump because he more definitely ends in sente.

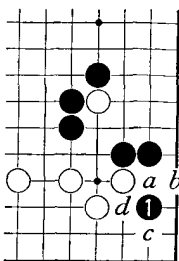
Dia. 4. If White has enough ko threats, he can also play 5 this way. If Black descends to 7 with 6, White catches him in a snap-back.

Problems. In each a monkey jump on the first line would be possible, but there is a better move. See if you can find it. Black is to play in problems 1&2, White in 3&4.

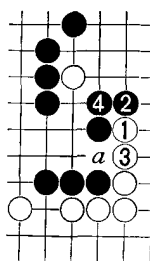




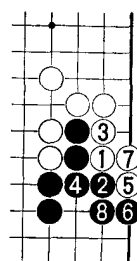
Ans. to Prob.1



Ans. to Prob.2



Ans. to Prob.3



Ans. to Prob.4

Answer to problem 1. Black can play 5 at *a* or, if he has the ko threats, at *b*.

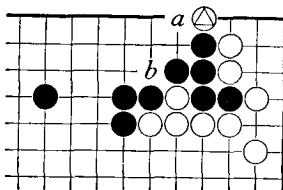
Answer to problem 2. Adding to the effectiveness of Black 1 is the fact that White *a*, Black *b*, White *c*, Black *d* puts two white stones in atari.

Answer to problem 3. White 3 at *a* is a possible variation.

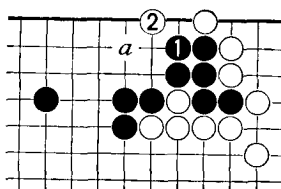
Answer to problem 4. This sequence works out to be two points better for White than the monkey jump.

Defending the Edge (I)

Dia. 1. How should Black answer White's hane at $\triangle$? He would like to give atari at *a*, but White would then give a counter-atari at *b* and the result would be disastrous. Black is suffering from an empty triangle compounded by a shortage of liberties, so he must be prepared to retreat a little.



Dia. 1

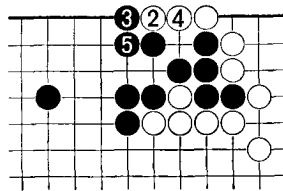


Dia. 2

Dia. 3. The correct move is the diagonal connection, which makes excellent shape. Now Black is ready to block at `a`, if White lets him.

A 10x10 grid with columns numbered 1-10 and rows numbered 1-10. A black circle is at (1, 5). A cluster of black and white circles is on the right. Black circles are at (2, 8) labeled '1', (2, 9), (3, 7), (3, 8), (3, 9), (4, 7), (4, 8), (4, 9), (5, 7), (5, 8), (5, 9), (6, 7), (6, 8), (6, 9), (7, 7), (7, 8), (7, 9), (8, 7), (8, 8), (8, 9), (9, 7), (9, 8), (9, 9), (10, 7), (10, 8), (10, 9), (10, 10). White circles are at (2, 9) labeled 'a', (3, 7), (3, 8), (3, 9), (4, 7), (4, 8), (4, 9), (5, 7), (5, 8), (5, 9), (6, 7), (6, 8), (6, 9), (7, 7), (7, 8), (7, 9), (8, 7), (8, 8), (8, 9), (9, 7), (9, 8), (9, 9), (10, 7), (10, 8), (10, 9), (10, 10).

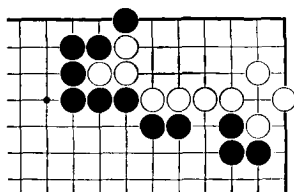
Dia. 3



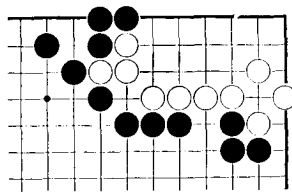
Dia. 4

Problem 1. White to play. Counting a prisoner at the 2-4 point, he should be able to keep fifteen points of territory.

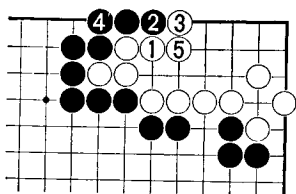
Problem 2. White to play. This time his goal is to keep twelve points of territory.



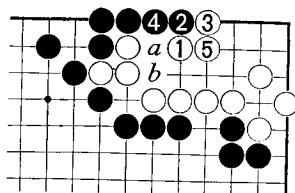
Problem 1



Problem 2



Ans. to Prob. 1



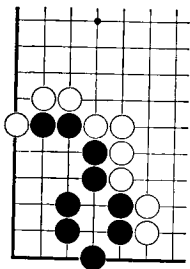
Ans. to Prob. 2

Answer to problem 1. White 1 at 2 is impossible — Black cuts at 1 — and White 1 at 5 would let Black play 3 and cause an unnecessary two-point loss.

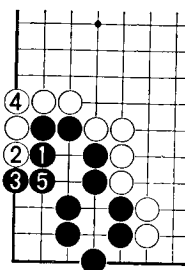
Answer to problem 2. White 1 is the only way to stop Black. After Black `a` and White `b`, White has twelve points left, counting a prisoner at the 2-4 point.

Defending the Edge (II)

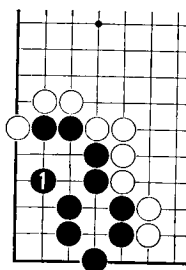
Dia. 1. Once again the question is how to answer a white hane on the edge. Black cannot help giving way, but if he plays correctly, he can stop White from following up his hane in sente.



Dia. 1



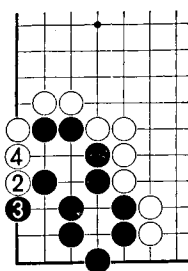
Dia. 2



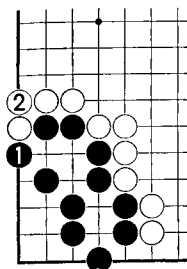
Dia. 3

Dia. 2. This Black 1 is a mistake, since White can play 2 and 4 in sente.

Dia. 3. The right move is this Black 1, the eye-protecting tesuji.



Dia. 4



Dia. 5

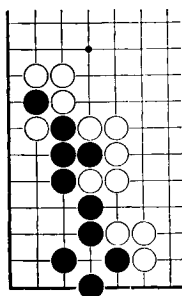
Dia. 4. True, White can jump to 2 and reduce Black's territory by one more point than in *Dia. 2*, but White 2 and 4 are gote.

Dia. 5. More than likely White will not take gote to play as in *Dia. 4*, and Black will be able to block at 1 in sente. Now his corner is two points bigger than in *Dia. 2*.

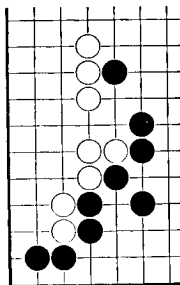
Problem 1. Black to play and defend thirteen points of territory in sente. (He has captured one prisoner.)

Problem 2. White to play. Recall what Black's move would be in this position.

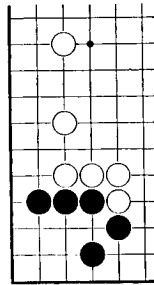
Problem 3. White to play. The obvious blocking move lets Black hane and connect in sente, so look for an alternative.



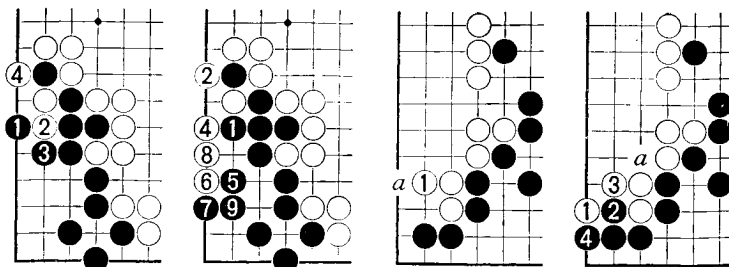
Problem 1



Problem 2



Problem 3



Ans. to Prob. 1

Dia. 1a

Ans. to Prob. 2

Dia. 2a

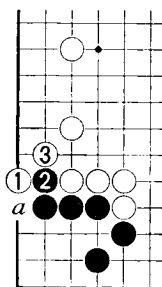
③ elsewhere

Answer to problem 1. Black 1, threatening 4, is the right defense. It is also the point to which White would extend if Black failed to defend.

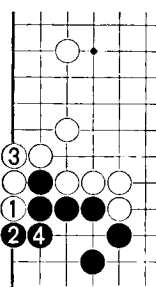
Dia. 1a. Giving atari at 1 and then playing elsewhere is the same as making no defense at all.

Answer to problem 2. White 1, taking the same point that Black would take, is the correct defense, although White a would be about equally good.

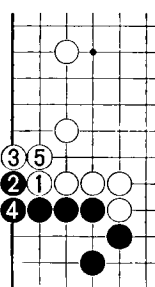
Dia. 2a. White 1 here is a mistake — White cannot connect after 4 because of Black a-and White 1 at 2 would be unthinkable.



Ans. to Prob. 3



Dia. 3a



Dia. 3b

Answer to problem 3. After White 3, Black a would be gote.

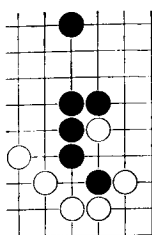
Dia. 3a. Thus White gets to play 1 and 3 in sente.

Dia. 3b. If White plays 1 here, Black 2 and 4 are sente.

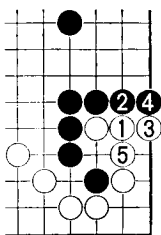
The Next Move

Dia. 1. There are times when you have to hold yourself to a smaller than possible immediate profit in order to prepare for a large next move. That is the case with White in this position.

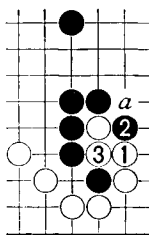
Dia. 2. If he descends at 1, Black descends beside him at 2, then at 4, both times threatening to wedge in at 5 and capture.



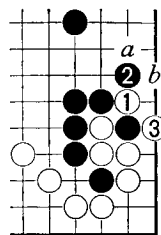
Dia. 1



Dia. 2



Dia. 3



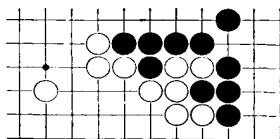
Dia. 4

Dia. 3. He can do better if he holds himself to this White 1 initially. If Black connects at a after 3, White has sente.

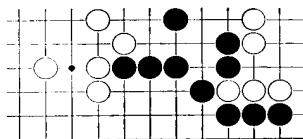
Dia. 4. If Black does not connect, White can make this capture, which threatens a further move at a or b. The initial play in Dia. 3 was small, but the bonus it made possible in Dia. 4 is huge.

Problem 1. Black to play. If he restrains himself, he has a nice reverse-sente play on the lower edge.

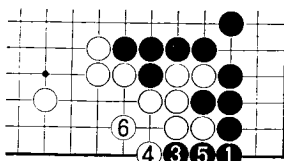
Problem 2. White to play. How should he handle the lower side — with a large knight's move, a small knight's move, or a diagonal move?



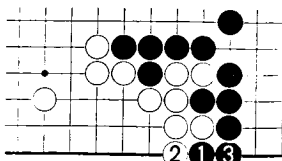
Problem 1



Problem 2



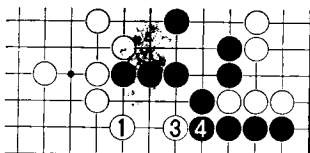
Ans. to Prob. 1
② elsewhere



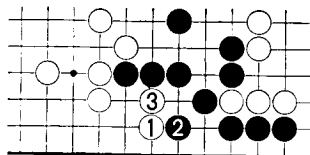
Dia. 1a

Answer to problem 1. Black should descend to 1, preparing for the tesuji at 3.

Dia. 1a. If he hanes with 1, he has no next move, and White's territory is two points larger.



Ans. to Prob. 2
② elsewhere



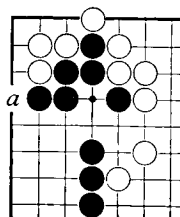
Dia. 2a

Answer to problem 2. White 1 must precede White 3. If White played 3 first, Black could capture it by playing 1.

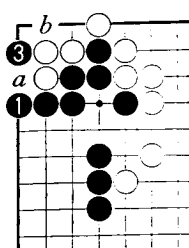
Dia. 2a. If White makes this small knight's move, he ends in gote with about five points less than in the correct answer.

Tesuji to Take Sente

Dia. 1. If Black neglects the left edge, White will hane at 'a'. Black would like to prevent that, and if he plays correctly, he may be able to do so in sente. Can you see how?

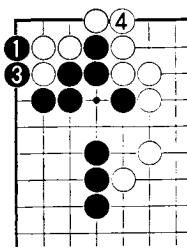


Dia. 1



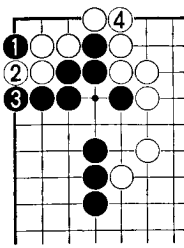
Dia. 2

② elsewhere



Dia. 3

② *elsewhere*



Dia. 4

Dia. 2. Good for you if you spotted the descent to Black 1, which is better than the hane at a because it gives Black the following jump to 3. If White wedges in between 1 and 3 at *a*, Black *b* starts a big ko. The only trouble with this is that if White simply ignores Black, both 1 and 3 are gote.

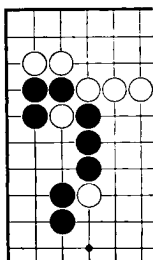
Dia. 3. Black's tesuji is to play 1 first. If White ignores that, Black can play 3 in sente.

Dia. 4. Accordingly, White will be more likely than in Dia. 2 to answer Black 1, allowing Black to descend to 3 in sente. If White tries to play 2 at 3, he runs afoul of the ko again.

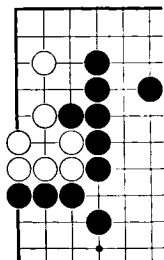
Problem 1. White to defend the left edge in sente.

Problem 2. Black to defend the corner in sente.

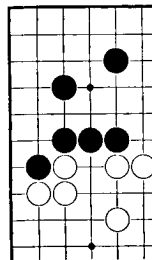
Problem 3. White to play. He gets his largest profit by capturing the black stone, but that is gote. There is a way for him to handle the left edge in sente instead.



Problem 1



Problem 2

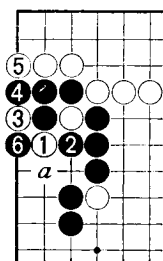


Problem 3

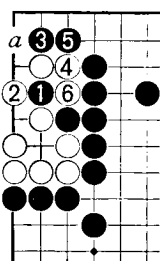
Answer to problem 1. White 1 and 3 are hard for Black to ignore,

and they make the descent to 5 an atari. If Black plays 4 at `a`, White can turn elsewhere and Black cannot hane at 5. White 1 at 5 would threaten 1, but Black could ignore it, and then both White 5 and 1 would be gote.

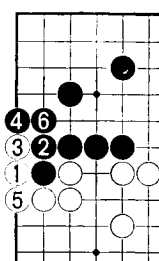
Answer to problem 2. White 4 at 6, followed by Black 4 and White 1, is a possible variation. Black 1 at 3, followed by White 1 and Black `a`, would give Black more profit, but in gote.



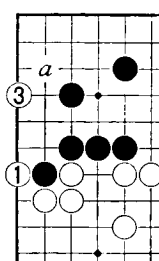
Ans. to Prob. 1



Ans. to Prob. 2



Ans. to Prob. 3



Dia. 3a
② elsewhere

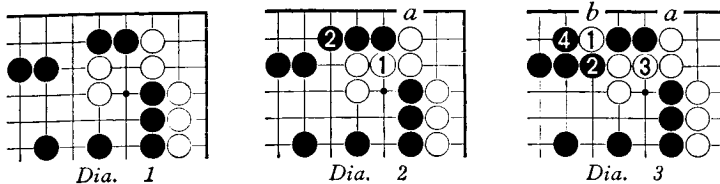
Answer to problem 3. White 1 yields only three points less than capturing at 2 would do, so when sente is worth more than three points, it is correct.

Dia. 3a. If Black ignores White 1, White will not capture his stone but leap into the corner with 3. This is much bigger; next White can play `a`.

Sacrifice Tesuji

In the previous section we saw three examples of sacrifices made in order to take sente. In this section we shall see some sacrifices that actually yield profits as well as sente.

Dia. 1. (next page) White has to save two of his stones from being cut off.



Dia. 2. The obvious way to do this is to connect at 1. Black draws straight back with 2, instead of playing on the third line, so as to be able to hane at *a* in sente. By allowing this, White has not done his best.

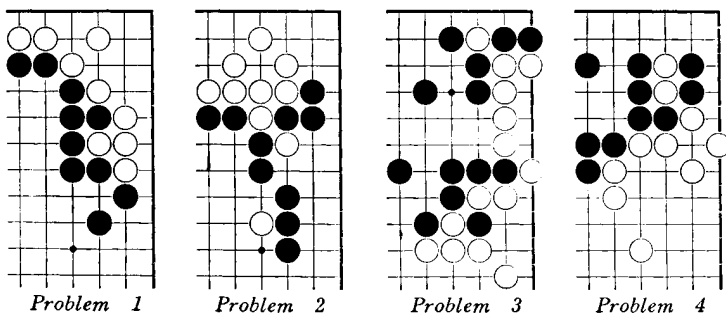
Dia. 3. White's tesuji is to sacrifice 1, so that after 4 Black can no longer hane at *a*. That makes White's corner two points bigger than in *Dia. 2*, but the surprising thing is that Black's territory is also one point smaller. Black has been given one prisoner, but he has to play twice inside his own territory — at 4 and, later, *b* — to capture it.

Problem 1. Black to play on the right edge.

Problem 2. White to play on the right edge.

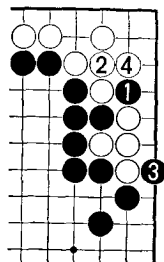
Problem 3. Black to play.

Problem 4. White to play. If he starts with a hane on the right edge, he loses one point.

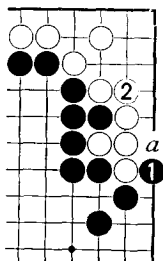


Answer to problem 1. Black 1 is a profitable sacrifice.

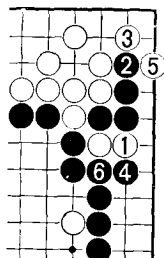
Dia. 1a. If White is allowed to connect at 2, then *a* becomes his sente and his territory is two points larger.



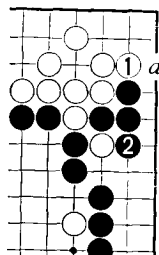
Ans. to Prob. 1



Dia. 1a



Ans. to Prob. 2

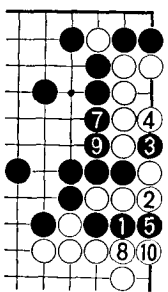


Dia. 2a

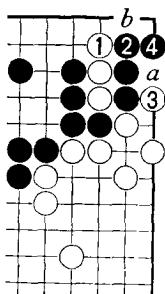
Answer to problem 2. White begins by playing 1 so that Black will have to capture two stones instead of just one.

Dia. 2a. If he blocks with 1, then since *a* is Black's sente, the corner is the same size as before, and Black's territory is two points larger.

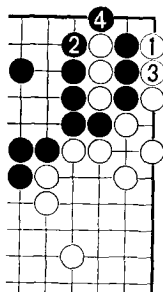
Answer to problem 3. Black 1 at 7, White 1 would mean a two-point loss for Black.



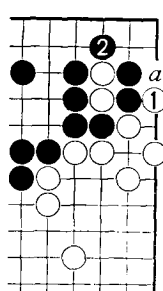
Ans. to Prob. 3



Ans. to Prob. 4



Dia. 4a



Dia. 4b

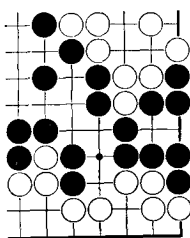
Answer to problem 4. Black 4 at *a*, White *b* would be a bad ko, and if Black omits 4 —

Dia. 4a. White 1 and 3 gain three points in sente.

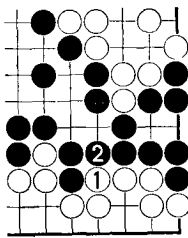
Dia. 4b. Since *a* is his sente, Black's territory is one point larger than in the correct answer.

Wedging Tesuji

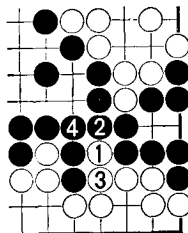
The sacrifice tesuji of the previous section worked by forcing the enemy into a shortage of liberties. The tesujis of this section work in the same way.



Dia. 1



Dia. 2



Dia. 3

Dia. 1. White to play.

Dia. 2. It would be rather thoughtless of him to treat this as a one-point-in-sente situation and push up with 1.

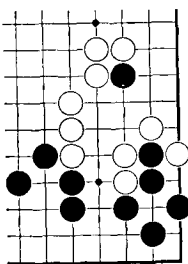
Dia. 3. Instead, he should wedge in at 1. Black would be putting himself in atari if he played 2 at 3, so he has to give way with 2 and White gains three points in sente.

Problem 1. Black to play. Find his tesuji and White's best answer to it.

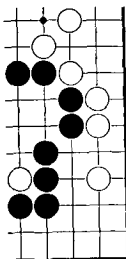
Problem 2. Black to play and defend his corner.

Problem 3. White to play.

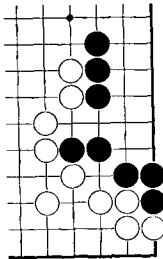
Problem 4. White to play and reduce Black's territory by two points.



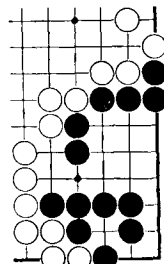
Problem 1



Problem 2



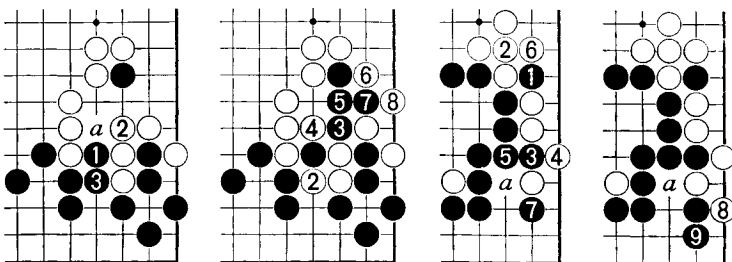
Problem 3



Problem 4

Answer to problem 1. White should answer at 2, not *a*, so as to end in sente.

Dia. 1a. If White cuts Black off with 2, he risks a big loss in a ko.



Ans. to Prob. 1

Dia. 1a

Ans. to Prob. 2

Dia. 2a

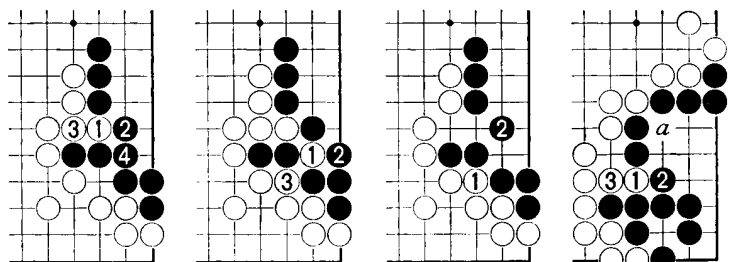
Answer to problem 2. Black 5 at *a* (ko) is worth considering, but even if Black has to give way with 5 and on through the next diagram, White is still haunted by a shortage of liberties.

Dia. 2a. He could not connect against Black 'a', for example.

Answer to problem 3. White 1 and 3 gain two points in sente. If Black does not connect at 4, White has a throw-in.

Dia. 3a. White 1 gains another two to four points.

Dia. 3b. This White 1 would gain only one point.



Ans. to Prob. 3

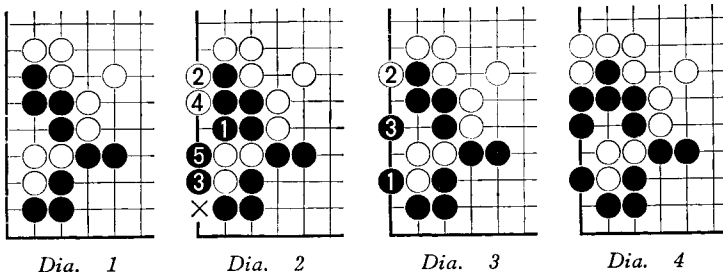
Dia. 3a

Dia. 3b

Ans. to Prob. 4

Answer to problem 4. White 1 threatens *a*. Black will have to connect at *a* later.

Capturing



Dia. 1. How should Black capture the three white stones so as to get the greatest profit?

Dia. 2. This way gives him only seven points of territory: three prisoners plus the point marked x.

Dia. 3. Black 1 and 3 are the right combination. They may be played in either order.

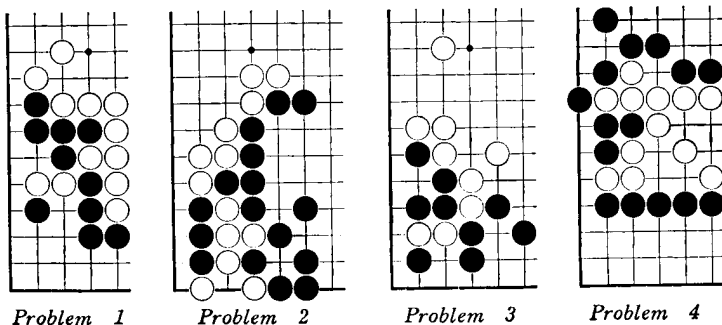
Dia. 4. After both sides have connected Black need make no further moves, so he has two points more than before.

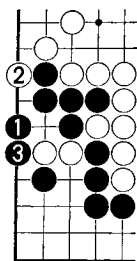
Problem 1. Black to capture the two white stones.

Problem 2. Black to play. If he leaves this position alone, White can start a multi-step ko.

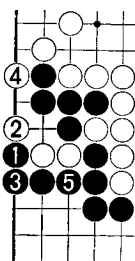
Problem 3. What is Black's best way to capture?

Problem 4. White to play and make seven points of territory by capturing three stones.

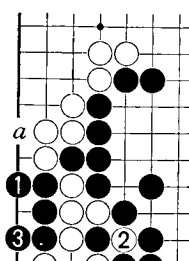




Ans. to Prob. 1



Dia. 1a

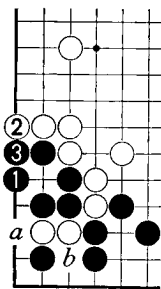


Ans. to Prob. 2

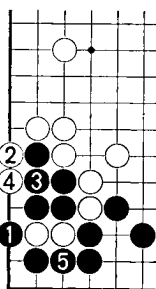
Answer to problem 1. After 3, Black will not have to fill any more liberties.

Dia. 1a. This hane gives him one or three points less profit, depending on whether White lets him capture 2 or not.

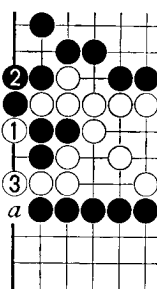
Answer to problem 2. After 1, if White opens the ko, Black makes an eye with 3. Black 1 also prepares for Black 'a'.



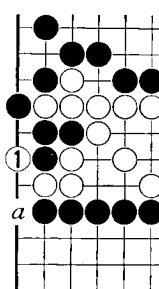
Ans. to Prob. 3



Dia. 3a



Ans. to Prob. 4



Dia. 4a

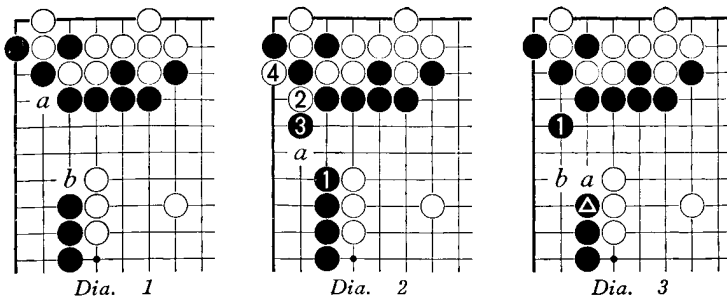
Answer to problem 3. Black's eye is safe. If White descends to 'a', Black 'b' holds him in check.

Dia. 3a. This sequence loses Black four points.

Answer to problem 4. White 1 confronts Black with the choice of being captured at 2 or having White descend to 3, which makes White a destructive.

Dia. 4a. This hane gives White one less point of territory, and White 'a' loses some of its force.

Dual-Purpose Moves



Dia. 1. How should Black defend the left side, where White is threatening both *a* and, more seriously, *b*?

Dia. 2. If he plays the obvious 1, White can later capture with 2 and 4. Next White *a* is possible.

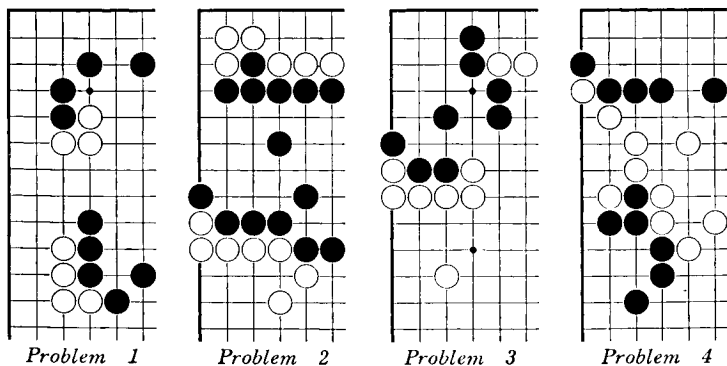
Dia. 3. The right move is this dual-purpose diagonal connection, which defends against both threats. The linkage between it and Black  is unbreakable: White `a`, Black `b`, for example.

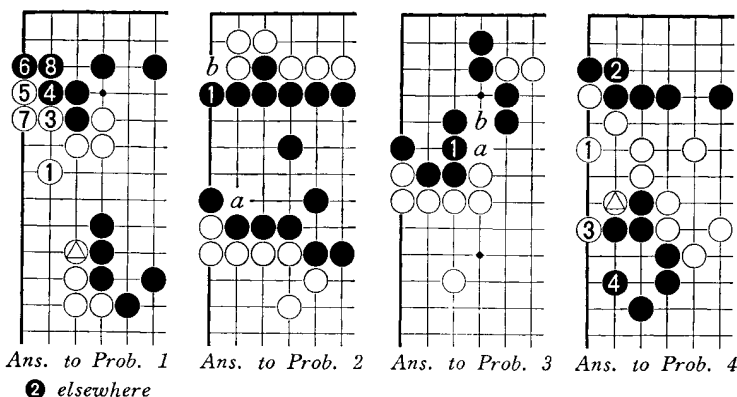
Problem 1. White to play on the left side.

Problem 2. Black to defend the left edge.

Problem 3. Black to play. How should he connect?

Problem 4. White to play on the left edge.





Answer to problem 1. White 1 links across to $\triangle$ and enables White to play 3 to 7 in sente.

Answer to problem 2. Black 1 is two points better than Black `a`, one point because he can push out at b in sente and one point because he has not filled his territory unnecessarily at `a`.

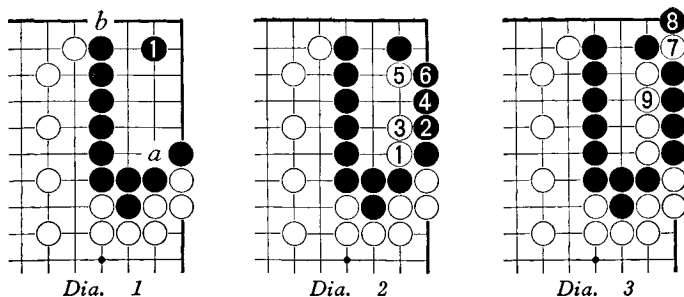
Answer to problem 3. After White a and Black b, Black 1 will be in just the right place, giving Black the maximum amount of territory.

Answer to problem 4. White 1 threatens 2 while protecting White $\triangle$ from capture. If Black connects at 2, White can hane at 3 in sente.

Invasions

Dia. 1. (next page) Occasionally the enemy makes a mistake and gives you the chance to reduce one of his territories more than just slightly. This diagram shows a good example. Black is trying both to guard the cutting point at a and keep White from playing b in sente, and Black 1 would be an excellent dual-purpose move if it worked, but it does not.

Dia. 2. Black has seen that if White drives him down the edge, even the jumping-ahead tesuji at 5 cannot stop him from linking up with 6.



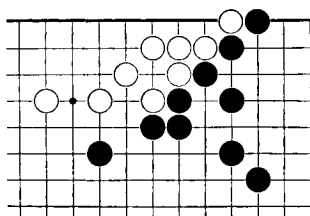
Dia. 3. But he has forgotten about the throw-in at 7. If he catches himself in time, he will answer White 1 in *Dia. 2* at the point between 3 and 5, but he still loses nearly half his territory.

Problem 1. White to invade Black's corner. The sequence involves a ko.

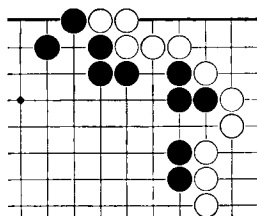
Problem 2. Black to invade White's corner-another ko.

Problem 3. Black to invade White's corner. Can White live?

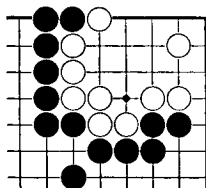
Problem 4. White to play — a sort of one-two cut.



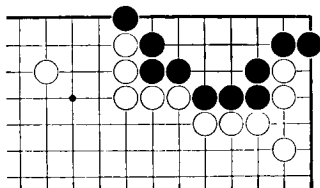
Problem 1



Problem 2



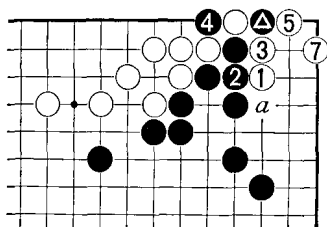
Problem 3



Problem 4

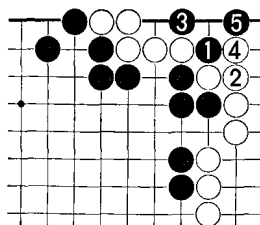
Answer to problem 1. If Black connects with 6, White 7 makes a living group. By playing 6 at `a`, Black can get a ko, but what he should have done before all this started was to draw back with  at 3.

Answer to problem 2. The ko is direct; Black can win it by connecting.



Ans. to Prob. 1

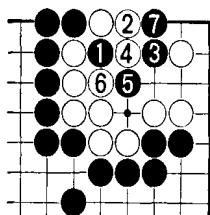
 connects



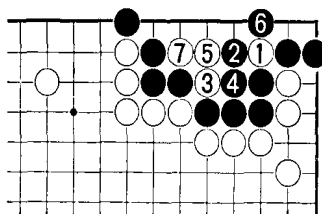
Ans. to Prob. 2

Answer to problem 3. Black 3 at 5 works, too. White should play 2 at 4, followed by Black 2 and White 3 or 5; then at least he can live.

Answer to problem 4. If Black plays 2 at 3 or 5, White extends to 2, gaining three liberties, then captures the two corner stones and kills the whole group. Note that White 1 at 3 would fail, Black answering at 5.

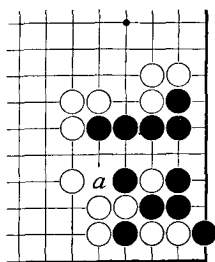


Ans. to Prob. 3

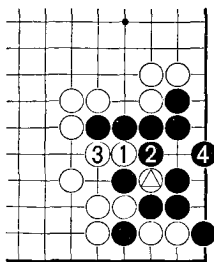


Ans. to Prob. 4

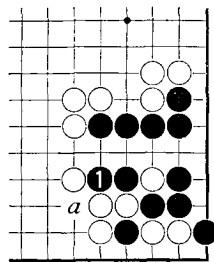
Tesuji that Attack Eye Shape



Dia. 1



Dia. 2



Dia. 3

Dia. 1. Even when an enemy group cannot be killed, it may be possible to earn a large profit by attacking it in the right way. That is certainly the case here.

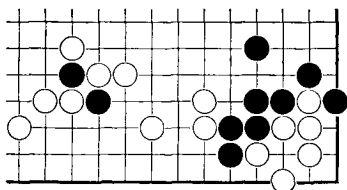
What should White do? It would be a bad mistake for him to give atari at 'a'.

Dia. 2. He should steal the eye at $\triangle$ with 1 and 3. Black can still live, but White trims him down to three points of territory in sente.

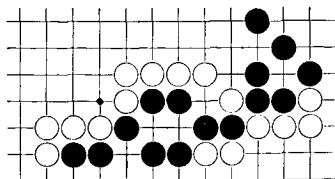
Dia. 3. You can get an idea of the size of the moves in the previous diagram by comparing it with this one. Now Black has eight points of territory, and White has the cutting point at a to worry about.

Problem 1. Black to play. By threatening the group in the corner, he can make a tremendous invasion of the area to the left.

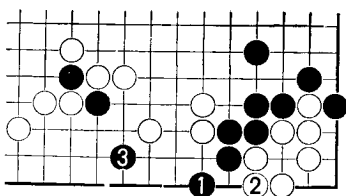
Problem 2. White to play. If he attacks the group on the lower side in the right way he can capture part of it in sente.



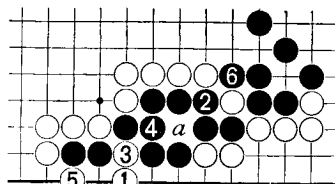
Problem 1



Problem 2



Ans. to Prob. 1



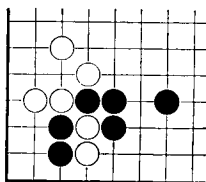
Ans. to Prob. 2

Answer to problem 1. Black 1 threatens 2 and a ko; if White connects at 2, Black can jump all the way in to 3.

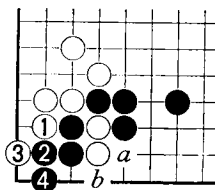
Answer to problem 2. If Black plays 2 at 3, White *a*, Black 4, and White 2 kill him, and Black 2 at 'a', White 3 would mean a life-or-death ko. White 1 at 'a', Black 4, White 2, Black 1, and White *a* is another possibility, but it ends in White's gote.

Miscellaneous Tesuji

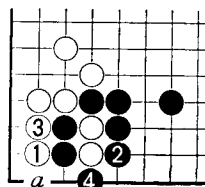
There are many, many other positions in which the right tesuji will yield a little extra profit. Here are a few of them.



Dia. 1



Dia. 2



Dia. 3

Dia. 1. White has lost two stones, but he can use them to squeeze Black in sente. How should he start?

Dia. 2. If he turns in at 1, Black can block with 2, then answer White 3 by descending to 4. Later, as White connects, he will capture with *a* and *b*.

Dia. 3. White can get a bigger share of the corner if he starts with 1 in this diagram. After 4 Black's territory is one point smaller than in Dia. 2 and White's is, if we average White *a* and Black *a*, two (-) points larger.

Problem 1. Black to play. Connecting above or pushing under the white stone on the 2-4 point is not good enough.

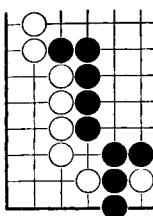
Problem 2. White to play. This shape resembles the example of Dias. 1 to 3.

Problem 3. White to play. Just turning at the 4-5 point would be sente, but there is a better sente play.

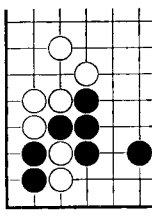
Problem 4. Black to play and reduce White's territory in the diagram to ten points while making a little territory for himself.

Problem 5. White to play. How should he defend his holdings in the center?

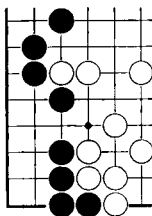
Problem 6. Black to play. A mere hane on the lower edge would be far too kind to White.



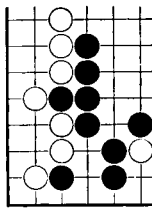
Problem 1



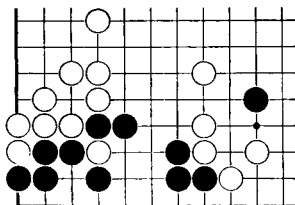
Problem 2



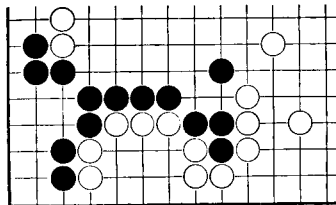
Problem 3



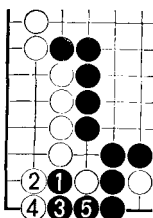
Problem 4



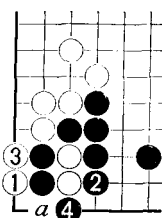
Problem 5



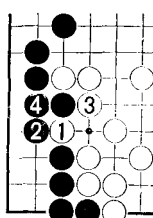
Problem 6



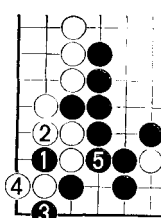
Ans. to Prob. 1



Ans. to Prob. 2



Ans. to Prob. 3



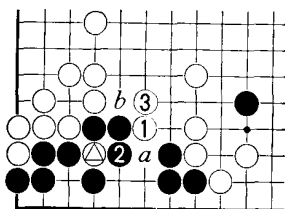
Ans. to Prob. 4

Answer to problem 1. Black 1 (four points in gote), is better than 1 at 5 (one point in sente).

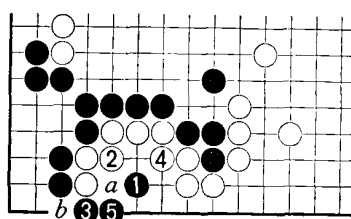
Answer to problem 2. If Black plays 2 at 3, White 3 at a makes a big, one-sided ko.

Answer to problem 3. Black cannot fight this one-sided ko, so he may as well connect at 4. Black 2 at 3, White 2 would lose him the corner.

Answer to problem 4. Black 1 threatens Black 2, so White has to connect there and let Black earn the maximum.



Ans. to Prob. 5

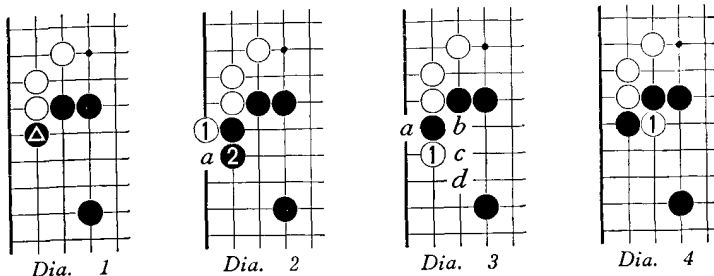


Ans. to Prob. 6

Answer to problem 5. White 1 takes advantage of the stone marked $\triangle$. If Black answers at a, White can give atari at b, then turn elsewhere.

Answer to problem 6. Black 1, the eye-stealing tesuji, cannot be captured — White 2 at a, Black 3, for example, or White 4 at 5, Black b, White a, Black 4 — so White's best course is to connect at 2 and 4 and make Black link up in gote with 3 and 5.

Cut, Clamp, or Hane?



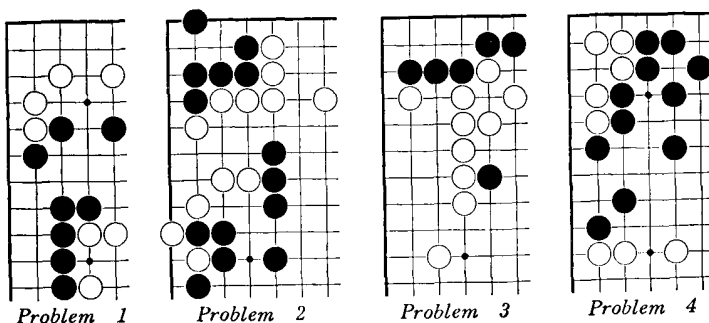
Dia. 1. During the endgame, when a stone like Black  is unprotected by any direct form of connection, there are generally three moves for White to consider.

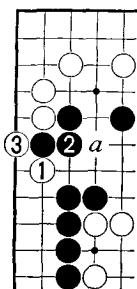
Dia. 2. If nothing else works, White can always hane at 1 and Black will have to give way at 2. If he blocks at `a`, White can cut at 2 and start a dangerous (for Black) ko.

Dia. 3. Much more effective is the clamping tesuji. If Black descends to a, White must be ready with a counter-move at, for example, b, c, or `d`.

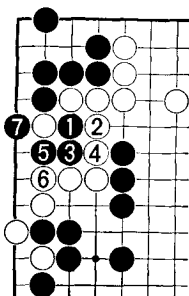
Dia. 4. Most effective of all, when it cannot be captured, is the direct cut.

Problems. In each the question is whether to cut, clamp, or hane, except that in problem 3 `push out' replaces `cut'. White to play in 1 & 4, Black to play in 2 & 3

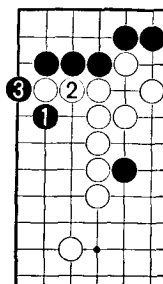




Ans. to Prob. 1



Ans. to Prob. 2



Ans. to Prob. 3

Answer to problem 1. Black connects solidly at 2 so as to give himself the option of taking sente after 3. White 1 at 2 would not work, because Black would give atari at 'a'.

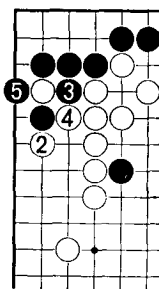
Answer to problem 2. If White plays 2 at 5, Black 4 leaves the whole side dead.

Answer to problem 3. Clamping at 1 gives Black the most profit. If he played at 2 or 3 instead, White would reply at 1.

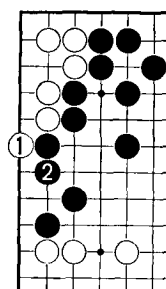
Dia. 3a. White can preserve some of his territory in sente, but at the loss of a stone.

Answer to problem 4. White can only hane at 1.

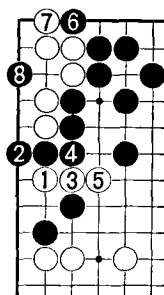
Dia. 4a. If he clamps, he ends up trading his corner for a small gain on the side.



Dia. 3a



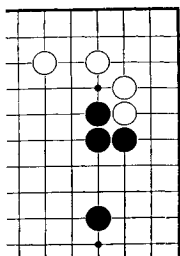
Ans. to Prob. 4



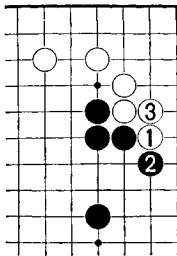
Dia. 4a

Hane or Descent?

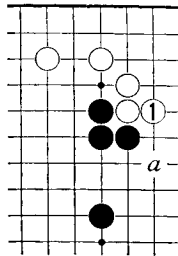
Dia. 1. (next page) In this type of position, whether to hane or descend on the right side can be a difficult problem.



Dia. 1



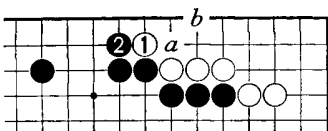
Dia. 2



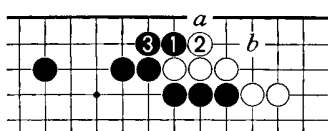
Dia. 3

Dia. 2. The hane gives more profit, but tends to be gote, unless White can follow it with a cut or clamp.

Dia. 3. The descent gives a smaller profit than the hane if answered, but a larger profit if Black ignores it and lets White jump in to 'a'.



Dia. 4



Dia. 5

Dia. 4. Another possibility is to play the hane as a forcing move, as White is doing here, and not connect immediately at a. If Black cuts at 'a', White has a good defense at 'b'.

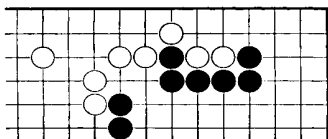
Dia. 5. If Black hanes at 1 first, White has to defend at 2, not a, and after 3 Black can hane again at 'a', forcing White to give way to 'b'.

Problem 1. Black to play: hane or descent? One of the two is automatically correct in this position.

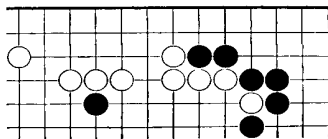
Problem 2. White to play: ditto.

Problem 3. Black to play: ditto.

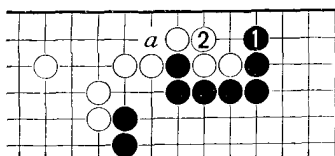
Problem 4. White to play: ditto.



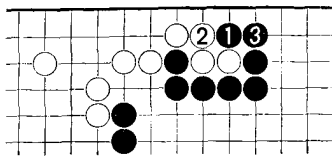
Problems 1 and 2



Problems 3 and 4



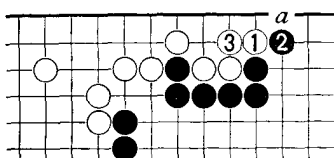
Ans. to Prob. 1



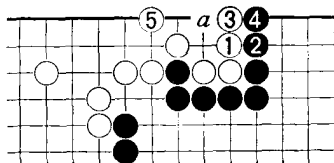
Dia. 1a.

Answer to problem 1. Black descends in sente to i. White's best answer is to connect solidly at 2. Later, he will have to connect again at `a`.

Dia. 1a. If Black hanes, he gets only about one point more of profit than before, and in gote instead of sente.



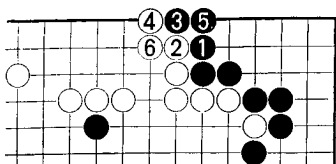
Ans. to Prob. 2



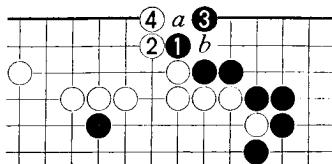
Dia. 2a

Answer to problem 2. First of all, White should hane at 1. Connecting at 3 gives him a to play next, but it would also be good for him to play just the 1-2 exchange as a forcing maneuver to keep Black from descending to 1 in sente.

Dia. 2a. Suppose White descends with 1. If he does not continue at 3, a black atari at 3 gives him a slightly worse result than if he had let Black play first-if Black descended to 2, White would not answer at 1 — but White 3 is gote, since Black 4 threatens to capture four stones with `a`. That is also the reason White cannot play 3 at 4. If he is going to end in gote anyway, the correct answer gives him more profit.



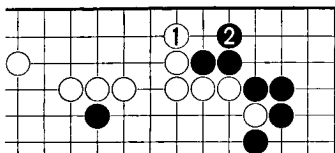
Ans. to Prob. 3



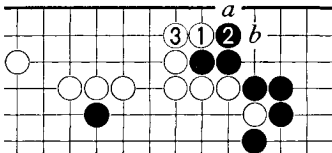
Dia. 3a

Answer to problem 3. In this position the correct move for either side is to descend. Black 3 and 5 are sente.

Dia. 3a. Suppose Black hanes. If White omits 4, Black is stuck with gote, while if White plays 4, Black gets only the same profit as before, (assume White *a*, Black *b*). That means that the hane may be worse than descending and cannot be better.



Ans. to Prob. 4



Dia. 4a

Answer to problem 4. If Black answers White 1, then 2 is the proper point, (although a jump down to the first line would probably come to the same thing). If Black does not answer, then White will jump forward to 2 himself.

Dia. 4a. Now White has gote, and White *a*, Black *b* etc. will yield him less than White 1, Black elsewhere, White 2 would in the correct answer diagram. If White wanted the result in Dia. 4a, he could get it by continuing from the correct answer. That in itself is enough to remove the hane at 1 from serious consideration.